

TYPES OF PROGRAMS FINANCING OPTIONS

The following are possible financing options for electronic recycling programs. The financing options are listed, in no particular order of preference, along with existing programs as examples.

Cost-Internalization/Invisible Fee (aka Extended Producer Responsibility¹)

Cost-internalization programs require producers (manufacturers) to be financially and/or physically responsible for electronics at the end of life. Manufacturers either implement their own take-back programs or appoint third-party organizations to handle the collection, transportation, recycling. For collection, manufacturers can plan their own infrastructure or cooperate with retailers, non-profits and/or municipalities to take back electronics. The electronics are then transported directly to recyclers or back to the manufacturers for recycling, refurbishing, or reuse. The costs incurred may be financed by invisible front-end fees charged to consumers at the point of purchase. The fees can pass invisibly through the retailers or retailers can collect and remit fees to manufacturers.

Examples of cost-internalization mandates are the European Union WEEE Directive², the Netherlands' ICT-Milieu, and Maine's LD 1892 legislation. Regulations may require manufacturers to report the share the costs of orphan electronic wastes collected, amount of electronics sold and recycled, and demonstrate environmentally-sound recycling practices. Reduction of toxicity and greater ease in recycling may also be required by law. Because they are financially responsible, manufacturers have the incentive to design products for less waste generation.

Advanced Recovery Fee (ARF)

Advance recovery fee programs are financed by fees charged to consumers at the point of purchase. The fees are set and managed by administrative entities such as government agencies or private third party organizations. Electronics retailers collect ARF from consumers and retain a percentage to cover the administrative costs. The rest of the money is deposited into an "ARF account", dispensed by the administrative entity, to pay for collection, transport, and recycling. There is a wide range of collection options, with possible participation of retailers, thrift stores, charities, repair shops, municipalities, and/or manufacturers, each of whom can be eligible for a collection incentive payment for their efforts. Collectors may use their own infrastructure or partner with haulers, recyclers, and manufacturers to handle transport. Electronics can be sent to authorized recyclers or manufacturers' recycling facilities. Charities, refurbishers, and other organizations can also take electronics for reuse. All collectors and recyclers must be approved by administrative entities before receiving their share of the ARF.

Examples of ARF mandates are the Netherlands' Disposal of White and Brown Good Decree (NVMP) and California's Electronic Waste Recycling Act. Under these laws, a fraction of the fees collected may go toward promotion, public education campaign, and manufacturers' take-back programs. The ARF encourages more consumer awareness and manufacturers responsibility. It would also eliminate the problem of orphan waste, as the fee is collected at the time of sale. This does not necessarily address historic orphan products in use prior to effective date of law. It could, if the law authorized that ARF revenues can pay for the associated costs of handling these products and the fees were high enough to cover all costs. The advantage of this approach is that the consumer does not get an electronic product without paying the fee. End of life costs are therefore covered, encouraging more returns.

End-of-life (EOL) Fee

End-of-life fee programs come in the forms of collection events, mail-back services, and permanent drop-off sites where end-users pay fees to cover the programs' expenses. Fee levels vary and can be subsidized, to some extent, by retailers, manufacturers, haulers, recyclers, government agencies, and/or other organizations. The fees may be paid on site or

¹ "EPSC Tour of Electronic Waste Producer Responsibility Programs", July 7, 2003. Electronic Product Stewardship Canada. <http://www.epsc.ca/pdfs/europe.pdf>. Europe and Japan defined cost-internalization and invisible ARF models as producer responsibility.

² "Directive 2002/96/EC of the European Parliament and of the Council", February 13, 2003. Europa. http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_037/l_03720030213en00240038.pdf. EU Directive specified that the costs of collection, treatment, and disposal cannot be shown to purchasers at the sales of new products.

online, depending on the collectors. Potential collectors include retailers, thrift stores, charities, repair shops, municipalities, and/or manufacturers. Collectors may offer pick-up services or accept drop-off electronic and contract haulers and carriers for transport. Electronics can be recycled at recyclers or manufacturers' facilities. In some cases, they can be refurbished and reused by charities and non-profit organizations. The costs of processing, recycling, collection, transport, and other associated activities may be financed by EOL fees.

Japan's SHAR Law mandates the end-of-life fee program. Other examples include Hewlett-Packard's mail-back, Best Buy take-back, the King County Take-It-Back Network, and the Snohomish County transfer station drop-off. Programs have been administered by both public and private entities. EOL fees are easy to manage and sustainable with a steady source of revenue for recycling electronics. However, participation may be lower due to the fee.

Subsidy

Subsidized programs may have the same collection, transport, and recycling infrastructure as end-of-life fee programs. Rather than charging EOL fees, the programs use grants from government, manufacturers, and other organizations to pay for all the costs incurred. An example of subsidy is the Clark County CREAM program, which uses Coordinated Prevention Grant funds provided by the Department of Ecology to finance a series of collection events and permanent drop-off locations. Because recycling is free for end-users, the participation rate and volumes of electronics turned in per person are expected to be higher.

Rebate & Consumer Incentive

Rebates/consumer incentives are manufacturer-sponsored, EOL fee programs where the end-users receive rebates or special offers for turning in electronics. Manufacturers and retailers may hire a third party or implement their own recycling program. Old electronics can be refurbished, reused, or recycled, depending on the condition. Fees do vary with the condition and type of electronics. After payment, end-users must purchase the manufacturer or retailer's products in order to take advantage of rebates or discount offers. One example of rebate program is Gateway's online trade-in. End-users pay for the recycling service via credit card and obtain rebates after purchasing Gateway products. Gateway, in exchange, has the opportunity to boost sales and displace competitive products. The program would encourage manufacturer and retailer participation as well as consumer recycling.

Hybrid (End-of-life and Cost-internalization/EPR)

Hybrid programs combine the features of the end-of-life fee with extended producer responsibility. End-of-life fees are applied to electronics bought before a set date; an EPR program is implemented for electronics sold thereafter. One example of a hybrid is Japan's Recycling Promotion Law. The Japanese ministry requires manufacturers to use a labeling system to distinguish EPR electronics from electronics with end-of-life fees. The program would eliminate the problem of orphan waste and enforce manufacturers' responsibility.

Curbside Collection Fee

Curbside collection fee programs incorporate electronics recycling into residential, curbside garbage or recycling pick-up services. The programs would make use of existing collection infrastructure. Electronics can be placed next to garbage cans for pick-up by haulers for delivery to recycling facilities. For this service, residents may have to pay an extra fee to the agency or party managing garbage pick-up or it may be incorporated into the overall cost of the curbside recycling collection service. The agency would, in turn, contract waste management groups for hauling and recycling electronics.

The curbside collection program is applied in the city of Kirkland. So far, the program is only available to single-household residents. For weekly collection, the fee is \$30.47 per month for 96 gallons in comparison to \$3.89 per month for 35 gallons. These rates are designed to encourage more recycling and less waste generation by residents. Residents would also have the benefit of convenient, curbside recycling.